

09/802,982
In re KARL
IN THE CLAIMS

1. (currently amended) A device for heating and/or air conditioning the passenger compartment of a motor vehicle, comprising an engine-cooling loop in which a heat-carrying fluid circulates for taking up heat from the engine and returning the heat to an air heater; a heat-pump loop in which a refrigerant fluid circulates, said heat-pump loop containing a compressor, a first evaporator constituting a cold source of the heat pump at which the refrigerant fluid takes up heat from the surroundings, and a first condenser constituting a hot source of the heat pump at which the refrigerant fluid gives up heat, the first condenser being integrated into the engine-cooling loop upstream of the air heater, the device further comprising an air-conditioning branch containing a second condenser and a second evaporator, the air-conditioning branch having an upstream end connected to the heat-pump loop downstream of the compressor, and a downstream end connected to the heat-pump loop upstream of the compressor, and a switching device making it possible to make the refrigerant fluid circulate either in the air-conditioning branch, or in the heat-pump branch, is such a way as to form a heat-pump loop,

wherein the cooling loop includes ~~control means including at least one~~ a first valve system to control the quantity of heat-carrying fluid which passes through ~~the first evaporator and the first condenser~~ and the heat-pump loop includes a second valve system to control the quantity of heat-carrying fluid which passes through the first evaporator,

wherein said first and second valve systems are adapted to regulate an intake pressure of said compressor.

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2. (original) The device of Claim 1, wherein the evaporator of the heat-pump loop is integrated into the cooling loop, upstream of the engine.

3. (original) The device of Claim 1, wherein the evaporator takes up heat from surroundings external to the engine-cooling circuit.

4-7. (canceled)

8. (original) The device of Claim 1, wherein the air-conditioning branch includes a refrigerant-fluid accumulator.

9. (original) The device of Claim 8, wherein the evaporator constitutes a refrigerant-fluid accumulator common to the air-conditioning loop and to the heat-pump loop.

10. (original) The device of Claim 1, wherein the air-conditioning branch includes an anti-return valve.

11. (original) The device of Claim 1, wherein the heat-pump loop includes pressure-reducing means for reducing the pressure of the refrigerant fluid between the condenser and the evaporator.

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12. (currently amended) A device for heating and/or air conditioning the passenger compartment of a motor vehicle, comprising an engine-cooling loop in which a heat-carrying fluid circulates for taking up heat from the engine and returning the heat to an air heater; a heat-pump loop in which a refrigerant fluid circulates, said heat-pump loop containing a compressor, a first evaporator constituting a cold source of the heat pump at which the refrigerant fluid takes up heat from the surroundings, and a first condenser constituting a hot source of the heat pump at which the refrigerant fluid gives up heat, the first condenser being integrated into the engine-cooling loop upstream of the air heater, the device further comprising an air-conditioning branch containing a second condenser and a second evaporator, the air-conditioning branch having an upstream end connected to the heat-pump loop downstream of the compressor, and a downstream end connected to the heat-pump loop upstream of the compressor, and a switching device making it possible to make the refrigerant fluid circulate either in the air-conditioning branch, or in the heat-pump branch, is such a way as to form a heat-pump loop, and

further comprising a modular casing containing the first evaporator, ~~control means~~ first valve system of the first evaporator for controlling the quantity of heat-carrying fluid which passes through the first evaporator, an anti-return valve upstream of the evaporator, the first condenser, ~~control means~~ second valve system of the first condenser for controlling the quantity of heat-carrying fluid which passes through the first condenser, the switching device and a pressure-reduction means of the heat-pump loop for reducing the pressure of the refrigerant fluid between the first condenser and the first evaporator,

wherein said first and second valve systems are adapted to regulate an intake pressure of said compressor.

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13. (original) The device of Claim 1, wherein the engine is an internal-combustion engine.

cont

14. (original) The device of Claim 1, wherein the engine is an electric motor.
